

1 1. A method of detecting an HIV-infected cell from a mammal undergoing
2 combination anti-HIV drug therapy, the method comprising detecting an HIV 2-LTR
3 circle DNA molecule obtained from a cell of the mammal, wherein the presence of a
4 2-LTR circle DNA indicates an HIV-infected cell.

1 2. The method of claim 1, further comprising amplifying the DNA molecule
2 before the detecting step.

1 3. The method of claim 2, wherein the DNA molecule is amplified using
2 polymerase chain reaction.

1 4. The method of claim 1, wherein the drug therapy comprises administering
2 to the mammal at least one HIV reverse transcriptase inhibitor.

1 5. The method of claim 4, wherein the drug therapy further comprises
2 administering to the mammal at least one HIV protease inhibitor.

1 6. The method of claim 1, wherein the drug therapy comprises administering
2 to the mammal at least one HIV protease inhibitor.

1 7. The method of claim 1, wherein the mammal is an HIV-1-positive
2 mammal.

1 8. The method of claim 7, wherein the mammal is a human.

1 9. The method of claim 1, wherein the mammal is a human.

1 10. The method of claim 1, wherein the cell is a peripheral blood
2 mononuclear cell.

1 11. The method of claim 1, wherein cell-free HIV viral RNA cannot be
2 detected in the blood of the mammal.

1 12. A method of detecting an HIV-infected cell in a mammal, the method
2 comprising detecting an HIV 2-LTR circle DNA molecule obtained from a cell of a
3 mammal, wherein cell-free HIV viral RNA cannot be detected in the blood of the
4 mammal, and wherein the presence of a 2-LTR circle DNA indicates a HIV-infected cell.

1 13. The method of claim 12, further comprising amplifying the DNA
2 molecule before the detecting step.

1 14. The method of claim 13, wherein the DNA molecule is amplified using
2 polymerase chain reaction.

1 15. The method of claim 12, wherein the mammal is an HIV-1-positive
2 mammal.

1 16. The method of claim 15, wherein the mammal is a human.

1 17. The method of claim 12, wherein the mammal is a human.

1 18. The method of claim 12, wherein the cell is a peripheral blood
2 mononuclear cell.

1 19. A method of detecting an HIV-1-infected peripheral blood mononuclear
2 cell (PBMC) in an individual, the method comprising
3 amplifying an HIV-1 2-LTR circle DNA molecule obtained from a PBMC of
4 an HIV-1-positive individual undergoing combination anti-HIV-1 drug therapy, to
5 produce an amplified nucleic acid, wherein cell-free HIV-1 viral RNA cannot be detected
6 in the blood of the individual; and
7 detecting the amplified nucleic acid, wherein the presence of the amplified
8 nucleic acid indicates the presence an HIV-infected PBMC.

1 20. A method of claim 1, further comprising obtaining the HIV 2-LTR circle
2 DNA molecule using an alkaline lysis method.

1 21. A method of claim 3, wherein the primers used for PCR comprise a (-)
2 strand primer spanning nucleotides 9591 to 9610 of the HXB2 strain of HIV-1, and a (+)
3 strand primer spanning nucleotides 9650-9669 of the HXB2 strain of HIV-1.

1 22. A method of treatment for HIV infection in a mammal, the method
2 comprising
3 administering to the mammal one or more anti-HIV agents in an amount
4 effective to reduce an HIV viral load in the mammal; and
5 detecting HIV-infected cells in the mammal using the method of claim 1,
6 wherein treatment is continued until the level of HIV-infected cells falls
7 below 1 in one million peripheral blood mononuclear cell.